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Walter Beck

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EXAMINER

TALBOT, BRIAN K

ART UNIT

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1792

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



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1. The amendment filed 3/6/09 has been considered and entered. Claims 2,3,9,10 have been canceled. Claims 1,4-8 and 11-22 remain in the application.

2. In light of the amendment filed 3/6/09, the 35 USC 112 rejections have been withdrawn.

***Claim Rejections - 35 USC § 103***

3. Claims 1,4-8 and 11-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. Patent 6,406,939, hereafter '939) (a) in view of Zuniga-Ortiz et al. (U.S. Patent Application Publication 2003/0080392, hereafter '392) and Bayan et al. (U.S. Patent 6,372,539, hereafter '539) or (b) in view of Applicant's admitted state of the art (pg. 1, lines 5-13).

Claims 1 and 6: '939 teaches an example which teaches  
a method for producing a conductive coating on a dielectric (i.e. insulating) substrate  
(col. 3, lines 43-53), comprising:

equipping, in selected regions, at least one surface of an electrically insulating substrate  
(401) with a coating of an electrically highly conductive first metal (402), the coating being  
structured as a printed circuit board;

cleaning the at least one coated surface (col. 6, lines 42-46);

seeding the coating with seeds of a second metal (Ni) and then depositing a layer  
including an alloy (Ni-P) of the second metal onto the coating seeded with the seeds of the  
second metal via electroless plating (col. 6, lines 50-55).

Claim 3: The electrolessly plated metal may include palladium alloys (col. 4, lines 6-11).

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‘939 does not explicitly teach that this substrate is subjected to firing. However, the examiner takes Official Notice that it is well known in the art of printed circuit components to fire components to bond them to one another after formation of the components. See, e.g., ‘939 col. 8, lines 34-40.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have bonded the product of Example 2 to another substrate via a firing process because it is well known in the art to use such processes in order to join printed circuit components together.

(a) ‘939 is discussed above. It teaches that the substrate may be a ceramic (col. 4, line 63-col. 5, line 2), but does not teach that the first metal includes silver.

However, silver is a well known material for terminal bonding pads. See, e.g., ‘392, claim 23. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a terminal pad including silver as the particular terminal pad of ‘939 with a reasonable expectation of success because ‘392 teaches that silver is a suitable material for terminal pads. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

‘939 teaches that the product may be subjected to connection technologies such as wire bonding, but ‘939 and ‘392 do not explicitly teach contacting a gold bonding wire to the first metal.

However, ‘539 teaches that gold wires may be used as connection technologies for circuit components, and that gold forms a sufficient bond with silver (col. 4, lines 38-50). Therefore it

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would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a gold bonding wire as the particular connection technology of '939 for attaching at least one chip because '939 teaches that wire bonding is a conventional connection technology and because '539 teaches that gold wires in particular are suitable for successful bonding to silver.

(b) '939 fails to teach the metallization paste to be silver, gold or silver alloys.

Applicant's admitted state of the art (pg. 1, lines 5-13) teaches that it is well known in the art that "in modern electronics, the trend is toward a greater and greater reduction in component sizes and toward the integration of passive components as well, so that existing requirements in terms of increasing integration density of integrated circuits can be met. One promising technology for achieving this goal is so-called low-temperature co-fired ceramic (LTCC), known for example from the periodical "productronic" 8, 1995, pp. 40 ff. LTCC refers to a glass-ceramic mixture that, together with metallization pastes made e.g. from Ag, AgPd, or Au, is fired at a relatively low temperature that is below the melting point of the aforesaid metals. '.

Therefore it would have been obvious for one skilled in the art to have utilized silver, gold or a silver alloy as evidenced by Applicant's admitted state of the art (pg. 1, lines 5-13) with the expectation of increasing integration density of integrated circuits as detailed above.

Claims 4-5,7-8,17 and 21: Regarding the composition of the alloy, it has been held that "differences in concentration or temperature will not support the patentability of subject matter

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encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical.” (MPEP 2144.05.II.A.)

***Response to Amendment***

4. Applicant's arguments filed 3/6/09 have been fully considered but they are not persuasive.

Appellant argued that the prior art fails to teach a firing being performed so that a first metal is diffused with a second metal.

First off, the firing step is taught in Applicant's admitted state of the art (pg. 1, lines 5-13) as detailed above as well as The Examiner's Official Notice that firing to bond two metals together to form an alloy is well known and this is supported by Applicant's admitted state of the art.

Applicant argued that the prior art fails and that there is no motivation to combine references.

The test of obviousness is not express suggestion of the claimed invention in any or all references but rather what the references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar with them. *In re Rosselet*, 347 F.2d 847, 146 USPQ 183

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(CCPA 1965); *In re Hedges*, 783 F.2d 1038. In this case the combination of references clearly teach the claimed invention as detailed above and addressed by the Examiner.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 8AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian K Talbot/  
Primary Examiner, Art Unit 1792

BKT